AMENDMENTS TO THE CLAIMS

Claims 1-37 (Cancelled)

Claim 38 (Currently Amended) A coding mode determining apparatus for determining at least one of a plurality of candidate coding modes of an image block, the plurality of coding modes determining at least one of (i) a division method in which the image block is divided into small blocks and (ii) a picture reference direction in motion estimation for the small blocks, the coding mode determining apparatus comprising:

a simple motion estimation portion that derives a first coding cost for each of the plurality of coding modes, based on a simple motion estimation for the small blocks, the small motion blocks being partitions of the image block obtained using each of the plurality of coding modes;

a coding mode selecting portion that selects a subset of the plurality of coding modes, based on the first coding cost derived for each of the plurality of coding modes by the simple motion estimation portion;

a complex motion estimation portion that derives a second coding cost for each of the plurality of coding modes, based on a complex motion estimation for the small blocks obtained using at least a subset of the selected subset of the plurality of coding modes, such that based on a result of the simple motion estimation by the simple motion estimation portion, (i) when the first coding cost of a forward prediction is substantially equal to the first coding cost of a backward prediction, the complex motion estimation portion sets picture reference directions to a forward direction, a backward direction, and a bi-direction, performs the complex motion estimation for the small blocks for the forward direction, the backward direction and the bi-direction, and calculates the second coding cost for the forward direction, the second coding cost

for the backward direction, and the second coding cost for the bi-direction, respectively, and (ii) when the first coding cost of the forward prediction differs from the first coding cost of the backward prediction, the complex motion estimation portion selects one of the forward prediction and the backward prediction having a smaller first coding cost, and calculates the second coding cost for the small blocks for one of the forward direction and the backward direction corresponding to the selected one of the forward prediction and the backward prediction; and

a coding mode determining portion that determines, from the plurality of coding modes, a coding mode of the image block, the coding mode being determined based on the second coding cost derived for each of the plurality of coding modes by the complex motion estimation portion~~,~~

~~wherein the complex motion estimation portion determines a picture reference direction used in the complex motion estimation, the picture reference direction being determined based on the simple motion estimation, and the picture reference direction being a prediction direction, and~~

~~wherein, based on the simple motion estimation for the small blocks, the complex motion estimation portion derives the second coding cost (i) by selecting both a forward prediction direction and a backward prediction direction, when both the forward prediction direction and the backward prediction direction result in substantially a same coding cost, and (ii) by selecting one of the forward prediction direction and the backward prediction direction resulting in a smaller coding cost, when the forward prediction direction and the backward prediction direction result in a different coding cost~~.

Claim 39 (Previously presented) The coding mode determining apparatus according to claim 38, wherein, when deriving the first coding cost of each of the plurality of coding modes, the simple motion estimation portion (i) performs the simple motion estimation in a plurality of picture reference directions on each of the small blocks obtained using each of the plurality of coding modes to calculate the first coding cost of each of the plurality of coding modes, then (ii) selects a picture reference direction, of the plurality of picture reference directions, having a lowest coding cost for each individual small block, and then (iii) sums up the first coding costs derived for all of the small blocks relating to the selected picture reference direction for each of candidate division methods individually to derive the first coding cost of the coding mode of each of the candidate division methods.

Claim 40 (Previously Presented) The coding mode determining apparatus according to claim 38, wherein, when deriving the first coding cost of each of the plurality of coding modes, the simple motion estimation portion (i) performs the simple motion estimation in a plurality of picture reference directions on each of the small blocks obtained using each of the plurality of coding modes to calculate the first coding cost of each of the plurality of coding modes, and then (ii) converts the first coding cost of each of the small blocks for each picture reference direction individually into a coding cost per image block to derive the first coding cost of the coding mode of each of candidate division methods for each of the plurality of picture reference directions.

Claim 41 (Currently Amended) The coding mode determining apparatus according to claim 39, wherein the simple motion estimation in the plurality of picture reference directions in the simple motion estimation portion includes only the forward prediction ~~direction~~, in which a

temporally preceding picture is referenced, and the backward prediction ~~direction~~ in which a temporally following picture is referenced.

Claim 42 (Currently Amended) The coding mode determining apparatus according to claim 40, wherein the simple motion estimation in the plurality of picture reference directions in the simple motion estimation portion includes only the forward prediction ~~direction~~, in which a temporally preceding picture is referenced, and the backward prediction ~~direction~~ in which a temporally following picture is referenced.

Claim 43 (Currently Amended) The coding mode determining apparatus according to claim 39, wherein the simple motion estimation in the plurality of picture reference directions in the simple motion estimation portion includes the forward prediction ~~direction~~, in which a temporally preceding picture is referenced, the backward prediction ~~direction~~, in which a temporally following picture is referenced, and a bi-directional prediction ~~direction~~, in which pictures that are on both sides in time are referenced.

Claim 44 (Currently Amended) The coding mode determining apparatus according to claim 40, wherein the simple motion estimation in the plurality of picture reference directions in the simple motion estimation portion includes the forward prediction ~~direction~~, in which a temporally preceding picture is referenced, the backward prediction ~~direction~~, in which a temporally following picture is referenced, and a bi-directional prediction ~~direction~~, in which pictures that are on both sides in time are referenced.

Claim 45 (Currently Amended) The coding mode determining apparatus according to claim 39,

wherein the simple motion estimation in the plurality of picture reference directions in the simple motion estimation portion includes the forward prediction~~-direction~~, in which a temporally preceding picture is referenced, and the backward prediction~~-direction~~, in which a temporally following picture is referenced, and

wherein the simple motion estimation portion derives a coding cost where a bi-directional prediction~~-direction~~, in which pictures that are on both sides in time are referenced, is performed, based on the forward prediction~~-direction~~ and the backward prediction~~-direction~~.

Claim 46 (Currently Amended) The coding mode determining apparatus according to claim 40,

wherein the simple motion estimation in the plurality of picture reference directions in the simple motion estimation portion includes the forward prediction~~-direction~~, in which a temporally preceding picture is referenced, and the backward prediction~~-direction~~, in which a temporally following picture is referenced, and

wherein the simple motion estimation portion derives a coding cost where a bi-directional prediction~~-direction~~, in which pictures that are on both sides in time are referenced, is performed, based on the forward prediction~~-direction~~ and the backward prediction~~-direction~~.

Claim 47 (Cancelled)

Claim 48 (Cancelled)

Claim 49 (Previously Presented) The coding mode determining apparatus according to claim 38, wherein the complex motion estimation portion selects at least a further subset of the selected subset of the plurality of coding modes, based on the simple motion estimation for the small blocks.

Claim 50 (Previously Presented) The coding mode determining apparatus according to claim 49, wherein the complex motion estimation portion (i) selects each of the plurality of coding modes in an ascending order of the first coding cost, (ii) derives the second coding cost by repeatedly selecting coding modes of the plurality of coding modes in the ascending order of the first coding cost, while a sum of a processing amount of the selected coding mode does not exceed a margin for the processing amount, and (iii) stops selecting coding modes when the sum of the processing amount of the selected coding modes exceeds the margin for the processing amount, and does not derive the second coding cost after a time when the sum of the processing amount of the selected coding modes exceeds the margin for the processing amount.

Claim 51 (Previously Presented) The coding mode determining apparatus according to claim 38, wherein the simple motion estimation portion changes, depending on an image attribute, a method of motion estimation in the simple motion estimation in such a manner that a processing amount for the simple motion estimation remains substantially constant.

Claim 52 (Previously Presented) The coding mode determining apparatus according to claim 38,

wherein the simple motion estimation is motion estimation having integer pixel accuracy, and

wherein the complex motion estimation is motion estimation having non-integer pixel accuracy.

Claim 53 (Previously Presented) An integrated circuit comprising the coding mode determining apparatus according to claim 38.

Claim 54 (Previously Presented) An image coding apparatus comprising:

the coding mode determining apparatus according to claim 38; and

a coding apparatus that codes the image block, based on the coding mode of the image block determined by the coding mode determining apparatus.

Claim 55 (Previously Presented) An integrated circuit comprising the image coding apparatus according to claim 54.

Claim 56 (Withdrawn) A coding mode determining apparatus for determining a coding mode of an image block, comprising:

an inter prediction portion that performs inter prediction on each block of field structure blocks and frame structure blocks of the image block to derive a coding cost;

a coding picture structure determining portion that determines a coding picture structure of the image block, based on the coding costs obtained by the inter prediction portion;

an intra prediction portion that performs intra prediction on each of the blocks having the determined coding picture structure to derive a coding cost; and

a coding prediction method determining portion that determines a coding prediction method for each of the blocks of the image block that have the determined coding picture structure by comparing the coding costs obtained with the inter prediction and the coding costs obtained with the intra prediction.

Claim 57 (Withdrawn) The coding mode determining apparatus according to claim 56, wherein the inter prediction portion sums up the respective coding costs of the blocks of the frame structure blocks to derive a coding cost of the frame structure blocks, and sums up the respective coding costs of the blocks of the field structure blocks to derive a coding cost of the field structure blocks.

Claim 58 (Withdrawn) The coding mode determining apparatus according to claim 57,

wherein the intra prediction portion performs intra prediction on each of the blocks having the determined coding picture structure to derive a coding cost, and

wherein the coding prediction method determining portion compares the coding costs derived in the inter prediction portion and the coding costs derived in the intra prediction portion for each of the blocks having the determined coding picture structure to determine a coding prediction method for each of the blocks.

Claim 59 (Withdrawn) The coding mode determining apparatus according to claim 56, wherein the image block is a block pair consisting of two square blocks.

Claim 60 (Withdrawn) An integrated circuit comprising the coding mode determining apparatus according to claim 56.

Claim 61 (Withdrawn) An image coding apparatus comprising:

the coding mode determining apparatus according to claim 56; and

a coding apparatus that codes an image block based on a coding mode of the image block that is determined by the coding mode determining apparatus.

Claim 62 (Withdrawn) An integrated circuit comprising the image coding apparatus according to claim 61.

Claim 63 (Withdrawn) A coding mode determining apparatus for determining a coding mode of an image block, comprising:

a simple motion estimation portion that performs a simple motion estimation for each block of field structure blocks and frame structure blocks of the image block to derive a coding cost; and

a coding picture structure determining portion that determines a coding picture structure by comparing the coding costs of the field structure blocks and the frame structure blocks of the image block, based on the coding costs obtained by the simple motion estimation portion.

Claim 64 (Withdrawn) The coding mode determining apparatus according to claim 63, wherein the simple motion estimation portion performs simple inter prediction and simple intra

prediction on each of the blocks, then selects one of the simple inter prediction and the simple intra prediction for each of the blocks by comparing the coding costs of the simple inter prediction and the coding costs of the simple intra prediction, and further sums up the respective coding costs of the blocks for each of the picture structures to derive a coding cost of the frame structure blocks and a coding cost of the field structure blocks.

Claim 65 (Withdrawn) The coding mode determining apparatus according to claim 64, wherein the simple inter prediction is inter prediction with integer pixel accuracy.

Claim 66 (Withdrawn) The coding mode determining apparatus according to claim 63, wherein the image block is a block pair consisting of two square blocks.

Claim 67 (Withdrawn) An integrated circuit comprising the coding mode determining apparatus according to claim 63.

Claim 68 (Withdrawn) An image coding apparatus comprising:

the coding mode determining apparatus according to claim 63;

a complex motion estimation portion that performs a complex motion estimation for an image block having a coding picture structure determined by the coding mode determining apparatus; and

a coding portion that codes the image block based on a prediction result obtained by the complex motion estimation portion.

Claim 69 (Withdrawn) The image coding apparatus according to claim 68, wherein the complex motion estimation portion performs complex inter prediction or complex intra prediction on each block having the determined coding picture structure.

Claim 70 (Withdrawn) The image coding apparatus according to claim 69, wherein the complex inter prediction is inter prediction with non-integer pixel accuracy.

Claim 71 (Withdrawn) An integrated circuit comprising the image coding apparatus according to claim 68.

Claim 72 (Currently Amended) A coding mode determining method for determining at least one of a plurality of candidate coding modes of an image block, the plurality of coding modes determining at least one of (i) a division method in which the image block is divided into small blocks and (ii) a picture reference direction in motion estimation for the small blocks, the coding mode determining method comprising:

a simple motion estimation step of deriving a first coding cost for each of the plurality of coding modes, based on a simple motion estimation for the small blocks, the small motion blocks being partitions of the image block obtained using each of the plurality of coding modes;

a coding mode selecting step of selecting a subset of the plurality of coding modes, based on the first coding cost derived for each of the plurality of coding modes by the simple motion estimation step;

a complex motion estimation step of deriving a second coding cost for each of the plurality of coding modes, based on a complex motion estimation for the small blocks obtained

using at least a subset of the selected subset of the plurality of coding modes, such that based on a result of the simple motion estimation performed by the simple motion estimation step, (i) when the first coding cost of a forward prediction is substantially equal to the first coding cost of a backward prediction, the complex motion estimation step sets picture reference directions to a forward direction, a backward direction, and a bi-direction, performs the complex motion estimation for the small blocks for the forward direction, the backward direction and the bi-direction, and calculates the second coding cost for the forward direction, the second coding cost for the backward direction, and the second coding cost for the bi-direction, respectively, and (ii) when the first coding cost of the forward prediction differs from the first coding cost of the backward prediction, the complex motion estimation step selects one of the forward prediction and the backward prediction having a smaller first coding cost, and calculates the second coding cost for the small blocks for one of the forward direction and the backward direction corresponding to the selected one of the forward prediction and the backward prediction; and

a coding mode determining step of determining, from the plurality of coding modes, a coding mode of the image block, the coding mode being determined based on the second coding cost derived for each of the plurality of coding modes by the complex motion estimation step~~, wherein the complex motion estimation step determines a picture reference direction used in the complex motion estimation, the picture reference direction being determined based on the simple motion estimation, and the picture reference direction being a prediction direction, and wherein, based on the simple motion estimation for the small blocks, the complex motion estimation step derives the second coding cost (i) by selecting both a forward prediction direction and a backward prediction direction, when both the forward prediction direction and the backward prediction direction result in substantially a same coding cost, and (ii) by selecting one~~

~~of the forward prediction direction and the backward prediction direction resulting in a smaller coding cost, when the forward prediction direction and the backward prediction direction result in a different coding cost~~.

Claim 73 (Withdrawn) A coding mode determining method for determining a coding mode of an image block, comprising:

an inter prediction step of performing inter prediction on each block of field structure blocks and frame structure blocks of the image block to derive a coding cost;

a coding picture structure determining step of determining a coding picture structure of the image block based on the coding costs obtained by the inter prediction step;

an intra prediction step of performing intra prediction on each of the blocks having the determined coding picture structure to derive a coding cost; and

a coding prediction method determining step of determining a coding prediction method for each of the blocks of the image block that have the determined coding picture structure by comparing the coding costs obtained with the inter prediction and the coding costs obtained with the intra prediction.

Claim 74 (Withdrawn) A coding mode determining method for determining a coding mode of an image block, comprising:

a simple motion estimation step of performing a simple motion estimation for each block of field structure blocks and frame structure blocks of the image block to derive a coding cost; and

a coding picture structure determining step of determining a coding picture structure by comparing the coding costs of the field structure blocks and the frame structure blocks of the image block, based on the coding costs obtained by the simple motion estimation step.

Claim 75 (Currently Amended) A non-transitory computer-readable recording medium having a coding mode determining program recorded thereon, the coding mode determining program for determining, with a computer, at least one of a plurality of candidate coding modes of an image block, the plurality of coding modes determining at least one of (i) a division method in which the image block is divided into small bocks and (ii) a picture reference direction in motion estimation for the small blocks, the coding mode determining program causing the computer to execute a method comprising:

a simple motion estimation step of deriving a first coding cost for each of the plurality of coding modes, based on a simple motion estimation for the small blocks, the small motion blocks being partitions of the image block obtained using each of the plurality of coding modes;

a coding mode selecting step of selecting a subset of the plurality of coding modes, based on the first coding cost derived for each of the plurality of coding modes by the simple motion estimation step;

a complex motion estimation step of deriving a second coding cost for each of the plurality of coding modes, based on a complex motion estimation for the small blocks obtained using at least a subset of the selected subset of the plurality of coding modes, such that based on a result of the simple motion estimation performed by the simple motion estimation step, (i) when the first coding cost of a forward prediction is substantially equal to the first coding cost of a backward prediction, the complex motion estimation step sets picture reference directions to a

forward direction, a backward direction, and a bi-direction, performs the complex motion estimation for the small blocks for the forward direction, the backward direction and the bi-direction, and calculates the second coding cost for the forward direction, the second coding cost for the backward direction, and the second coding cost for the bi-direction, respectively, and (ii) when the first coding cost of the forward prediction differs from the first coding cost of the backward prediction, the complex motion estimation step selects one of the forward prediction and the backward prediction having a smaller first coding cost, and calculates the second coding cost for the small blocks for one of the forward direction and the backward direction corresponding to the selected one of the forward prediction and the backward prediction; and

a coding mode determining step of determining, from the plurality of coding modes, a coding mode of the image block, the coding mode being determined based on the second coding cost derived for each of the plurality of coding modes by the complex motion estimation step~~, wherein the complex motion estimation step determines a picture reference direction used in the complex motion estimation, the picture reference direction being determined based on the simple motion estimation, and the picture reference direction being a prediction direction, and wherein, based on the simple motion estimation for the small blocks, the complex motion estimation step derives the second coding cost (i) by selecting both a forward prediction direction and a backward prediction direction, when both the forward prediction direction and the backward prediction direction result in substantially a same coding cost, and (ii) by selecting one of the forward prediction direction and the backward prediction direction resulting in a smaller coding cost, when the forward prediction direction and the backward prediction direction result in a different coding cost~~.

Claim 76 (Withdrawn) A coding mode determining program for determining, with a computer, a coding mode of an image block,

wherein the coding mode determining program lets the computer perform a coding mode determining method comprising:

an inter prediction step of performing inter prediction on each block of field structure blocks and frame structure blocks of the image block to derive a coding cost;

a coding picture structure determining step of determining a coding picture structure of the image block based on the coding costs obtained by the inter prediction step;

an intra prediction step of performing intra prediction on each of the blocks having the determined coding picture structure to derive a coding cost; and

a coding prediction method determining step of determining a coding prediction method for each of the blocks of the image block that have the determined coding picture structure by comparing the coding costs obtained with the inter prediction and the coding costs obtained with the intra prediction.

Claim 77 (Withdrawn) A coding mode determining program for determining, with a computer, a coding mode of an image block,

wherein the coding mode determining program lets the computer perform a coding mode determining method comprising:

a simple motion estimation step of performing a simple motion estimation for each block of field structure blocks and frame structure blocks of the image block to derive a coding cost; and

a coding picture structure determining step of determining a coding picture structure by comparing the coding costs of the field structure blocks and the frame structure blocks of the image block, based on the coding costs obtained by the simple motion estimation step.

Claim 78 (Previously Presented) The coding mode determining apparatus according to claim 38, wherein the complex motion estimation portion performs the complex motion estimation by selecting each of the plurality of coding modes (i) in an ascending order of the first coding cost and (ii) within a range in which a sum of a processing amount of the plurality of coding modes does not exceed an allowable value of the image block.

Claim 79 (Previously Presented) The coding mode determining apparatus according to claim 78, wherein the processing amount is determined, such that the processing amount is proportional to a pixel number of a small block of the image block.

Claim 80 (Previously Presented) The coding mode determining apparatus according to claim 78, wherein the processing amount is determined, such that the processing amount is proportional to a number of picture reference directions.

Claim 81 (Currently Amended) The coding mode determining apparatus according to claim 80, wherein the processing amount is determined, such that the processing amount is proportional to the number of picture reference directions derived by:

not counting picture reference directions when the simple motion estimation in the plurality of picture reference directions is performed through a bi-directional prediction ~~direction~~, in which pictures that are on both sides in time are referenced; and

counting picture reference directions when the simple motion estimation in the plurality of picture reference directions is performed through a prediction ~~direction~~, other than the bi-directional prediction ~~direction~~ in which pictures that are on both sides in time are referenced.

Claim 82 (Previously Presented) The coding mode determining apparatus according to claim 38, wherein the complex motion estimation portion changes, depending on an image attribute, a method of motion estimation in the complex motion estimation in such a manner that a processing amount for the complex motion estimation remains substantially constant.

Claim 83 (Previously Presented) The coding mode determining apparatus according to claim 38, wherein the simple motion estimation portion and the complex motion estimation portion respectively change, depending on an image attribute, a method of motion estimation in such a manner that a sum of a processing amount for the simple motion estimation by the simple motion estimation portion and a processing amount for the complex motion estimation by the complex motion estimation portion remains substantially constant.

Claim 84 (Previously Presented) The coding mode determining apparatus according to claim 51, wherein the image attribute is at least one of (i) a size of the image block, (ii) a coding method for a picture type, including I-picture, P-picture, and B-picture, of the image block, (iii) a format for a scanning method, including progressive and interlaced, and a chroma format of the image block, and (iv) a motion amount of the image block.

Claim 85 (Previously Presented) The coding mode determining apparatus according to claim 82, wherein the image attribute is at least one of (i) a size of the image block, (ii) a coding method for a picture type, including I-picture, P-picture, and B-picture, of the image block, (iii) a format for a scanning method, including progressive and interlaced, and a chroma format of the image block, and (iv) a motion amount of the image block.

Claim 86 (Previously Presented) The coding mode determining apparatus according to claim 83, wherein the image attribute is at least one of (i) a size of the image block, (ii) a coding method for a picture type, including I-picture, P-picture, and B-picture, of the image block, (iii) a format for a scanning method, including progressive and interlaced, and a chroma format of the image block, and (iv) a motion amount of the image block.

Claim 87 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion changes a method of motion estimation in the simple motion estimation and the complex motion estimation, such that a product of a size of an input image constituted by the image block, a number of reference pictures and a number of partition sizes remain substantially constant.

Claim 88 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion renders a number of reference pictures for B-pictures smaller than those for P-

pictures, such that the processing amount for the simple motion estimation and the complex motion estimation for each picture remains substantially constant.

Claim 89 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion keeps the processing amount for the simple motion estimation and the complex motion estimation constant for each picture through one of the following:

at least one of the simple motion estimation portion and the complex motion estimation portion references a preceding four pictures for P-pictures, and references a preceding two pictures and a subsequent two pictures for B-pictures;

at least one of the simple motion estimation portion and the complex motion estimation portion references a preceding three pictures for P-pictures, and references a preceding two pictures and a subsequent one picture for B-pictures; and

at least one of the simple motion estimation portion and the complex motion estimation portion references a preceding two pictures for P-pictures, and references a preceding one picture and a subsequent one picture for B-pictures.

Claim 90 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion renders a number of partition sizes of B-pictures smaller than that of P-pictures, such that the processing amount for the simple motion estimation and the complex motion estimation for each picture remains substantially constant.

Claim 91 (Currently Amended) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion keeps the processing amount for the simple motion estimation and the complex motion estimation constant for each picture through one of the following:

at least one of the simple motion estimation portion and the complex motion estimation portion (A) references a preceding one picture for P-pictures, and performs a prediction for four partition sizes of 16x16, 16x8, 8x16 and 8x8, and (B) selects two of the above-described four partition sizes for B-pictures, and performs the forward prediction and the backward prediction for both of the selected two; and

at least one of the simple motion estimation portion and the complex motion estimation portion (C) references a subsequent one picture for P-pictures, and performs a prediction for four partition sizes of 16x16, 16x8, 8x16 and 8x8, and (D) selects two of the above-described four partition sizes for B-pictures, and performs the forward prediction and the backward prediction for both of the selected two.

Claim 92 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion renders a number of reference pictures or a number of partition sizes when an input image is an interlaced image smaller than the number of reference pictures or the number of partition sizes when the input image is a progressive image.

Claim 93 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion:

in a case of P-pictures, references a preceding two frames for progressive P-pictures, and references a preceding two fields for interlaced P-pictures; and

in the case of P-pictures, (A) references a preceding one frame for progressive P-pictures, and performs a prediction for each of four types of partition sizes of 16x16, 16x8, 8x16 and 8x8, and (B) references a preceding two fields for interlaced P-pictures, and performs a prediction for two types of the partition sizes for each of selected two partition sizes.

Claim 94 (Previously Presented) The coding mode determining apparatus according to claim 84, wherein at least one of the simple motion estimation portion and the complex motion estimation portion changes a number of reference pictures or a number of partition sizes, in accordance with a motion of the image block.

Claim 95 (Previously Presented) The coding mode determining apparatus according to claim 50, wherein the processing amount is determined, such that the processing amount is proportional to a pixel number of a small block of the image block.

Claim 96 (Previously Presented) The coding mode determining apparatus according to claim 50, wherein the processing amount is determined, such that the processing amount is proportional to a number of picture reference directions.